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Voigt, Benjamin ; Novak, Jasminko ; Schwabe, Gerhard

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Abstract

Although knowledge transfer has been recognized as one of the critical success factors in outsourcing, there is currently no work systematically reporting on how knowledge transfer is and can be managed in the firms involved in outsourcing relationships. This paper presents results of 12 case-studies analyzing knowledge transfer processes in IT-outsourcing, investigated through 48 structured interviews. The findings identify the main knowledge transfer phases and current practices between outsourcing partners. They are consolidated into a preliminary, empirically-grounded reference model for knowledge transfer in outsourcing. Special attention is given to the analysis of outsourcing-specific knowledge transfer activities and most frequently used knowledge transfer techniques. By analyzing how current practices can be effectively employed or extended to reduce outsourcing-specific knowledge-asymmetries, we provide one of the first contributions to understanding how firms can design, manage and support knowledge transfer as a strategic goal of their outsourcing relationships.

Keywords

Knowledge transfer, outsourcing, case study, information technology.

Introduction

One of the most crucial factors influencing the success of an IT outsourcing relationship is knowledge transfer. In the eSourcing Capability Model (Hyder et al., 2004) a Carnegie Mellon team lists "capturing and transferring knowledge gained to the client during contract completion" as one of the critical issues in their model. Similarly, a recent study by Accenture and Economist Intelligence Unit (Rea et al., 2003) cites that the risk of losing valuable data to the competitor's hand due to sourcing was considered true for 52% of respondents, while 45% believe that sourcing leads to in-house knowledge erosion.

Existing work has considered knowledge transfer and outsourcing in separate lines of research. A few contributions note and address the relationships between them only partially and punctually (Nicholson & Sahay, 2006). Hence, in spite of its critical importance, there is currently no work systematically reporting on how knowledge transfer is and can be managed in the firms involved in outsourcing relationships.

We believe that organizations should receive a sound method–based support in understanding how to plan, manage and deploy the knowledge transfer process from the very outset of building and running their outsourcing relationships. In this paper we report on a series of case-studies analyzing knowledge transfer processes in IT-outsourcing investigated through structured interviews. Based on the study results, we identify the main knowledge transfer phases and activities and consolidate them into a preliminary reference model for knowledge transfer in outsourcing. A detailed analysis of current practices and knowledge transfer techniques shows how they can be effectively employed or extended to reduce outsourcing-specific knowledge-asymmetries. In this way, we provide one of the first contributions to understanding how firms can design, manage and support knowledge transfer as a strategic goal of their outsourcing relationships. Our work is in part also motivated by the fact that outsourcing organisations are frequently interacting within situations characterized by information asymmetries. We argue in this article that these situations need new organisational practices for effective management.

Related work

Proper management of knowledge transfer has in the past already helped Toyota to reach outstanding performance within its supplier network (Dyer & Nobeoka, 2000). While outsourcing differs from supply chain management in general regarding the fact that formerly internal processes will be handed over to an external partner – general suppliers have been external entities since the beginning of a firm - important similarities like vendor management remain. Therefore it is important to establish how the knowledge transfer process is represented in the more specialized process of IT outsourcing. We are analysing the knowledge transfer between firms where both parties are bound by an outsourcing relationship. While previous work has been published on the various influencing factors and processes, to our knowledge, no one has conducted systematic research in order to propose a process model for knowledge transfer in an outsourcing context. The following section surveys related work in both the knowledge transfer and outsourcing area which helps to explain our choice for a specific process model in establishing the baseline for our research.

A general knowledge transfer process model

Process oriented knowledge transfer has been studied across various dimensions. Krogh and Marija (1998) as well as Szulanski (1999) formulated a phase based model of knowledge transfer within a firm. While Szulanski (1999) surveyed 122 transfers of practices, Krogh and Marija (1998) based their work on a literature survey. However neither author offered an inter-firm knowledge transfer process, nor have case studies been conducted to explore the matter in depth. A knowledge transfer across organizational barriers is effectively different and possibly a more difficult task (Darr & Kurtzberg, 2000).

Apart from Krogh and Marija's (1998) and Szulanski's (1999) work, other recent research has studied particular factors of influence on knowledge transfers such as trust (De Long & Fahey, 2000) and culture (Lin et al., 2005). Also, the competitive advantages of knowledge transfer within the firm have been outlined by Argote and Ingram (2000). While some of the studied influencing factors and benefits of knowledge transfer may apply to relationships between firms, none of the previous work considered organization spanning knowledge transfers directly. Embedding knowledge transfer into the business context, however, has recently been suggested by Chini (2004) in order to identify effectiveness and tangible benefits.

We base our work on the knowledge transfer process model of Szulanski (1999) because his model proves suitable regarding two aspects. First, he identifies knowledge transfer participants as individual actors (source and recipient); thereby Szulanski's (1999) model is closer to the sender and receiver relationship, as suggested by Lin et al. (2005). By doing so explicitly, he already introduces the concept of separate entities. Thus, Szulanski (1999) is closer to an inter-organizational context of clearly identifiable knowledge senders and knowledge receivers, each within legally different organizations. Second, Szulanski (1999) considers the personal properties of each individual very carefully. Since information-asymmetries between separate entities will produce stronger barriers (discussed in more detail by Ring and Ven (1992), among others), it

is important to gain at least the sender's willingness to cooperate (Osterloh & Frey, 2000). We argue that Szulanski's (1999) proposed model is well suited as a starting point to study knowledge transfer in the outsourcing context.

The knowledge transfer model by Szulanski (1999) consists of a four- phase process (see Figure 1). The initiation phase establishes which individuals will be knowledge carriers and knowledge receivers. Cooperative planning among the relevant stakeholders aims to reduce ambiguity and uncertainty at an early stage. During the implementation phase the knowledge carrier and the knowledge receiver will be exchanging information resources and artefacts according to the plan and interaction rules established in the initiation phase.

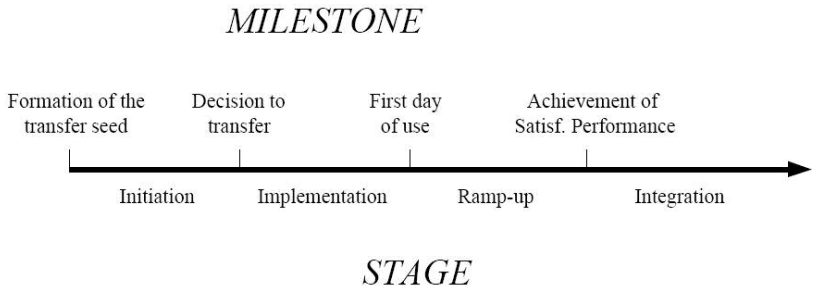

Figure 1. General knowledge transfer process model from Szulansk, (1999)

Upon successful completion of the implementation phase, the process enters into the ramp-up phase. During the ramp-up phase it is critically important that the knowledge receiver is applying his knowledge. The knowledge receiver will start to take-over work from the knowledge carrier. At the end of the ramp-up phase the knowledge receiver will have taken full responsibility of the work-results associated with the knowledge being transferred.

The final integration phase will initiate the knowledge diffusion from the knowledge receiver to his peers. Further more new knowledge acquired during the ramp-up phase will be added to the existing pool of artefacts created during the implementation phase.

Outsourcing process model

In order to determine how the described knowledge transfer model is related to the outsourcing context we need to identify a suitable outsourcing process model first. A recent literature review by Beaumont and Zaffer (2005) reveals a diverse set of different outsourcing processes within the academic field. (Many more have been proposed by practitioners.) Much of the work focused on the early stages of the process, among others, are Zhu and Hsu (2001) as well as McIvor (2000). A varying set of dimensions affecting the outsourcing process have been described extensively by various authors, for example in Feeny and Willcocks (1998) as well as in Lacity and Willcocks (1998).

Concrete outsourcing process elements have been proposed by Zahn et al. (1999), Gründer (2004), Dittrich and Braun (2004), Bräutigam (2004) and Georgius et al. (2005). Based on this work we constructed a five phase outsourcing process to be used in this research: evaluation, negotiation, operation, transition, and exit (see Figure 2). However, this remains a theoretical model suitable for our purpose.

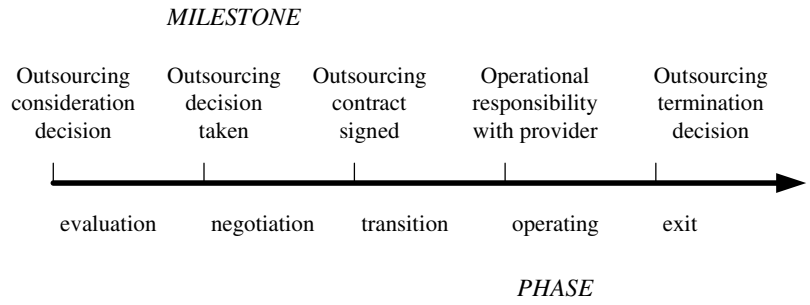

Figure 2 Outsourcing process model summarizing the literature

The beginning of an outsourcing project is marked by evaluation activities (Bugajska et al, 2006) including strategic positioning and goal setting, analysis of the current situation, invitation and consideration of tender offers and due diligence of the matter at hand (Gründer, 2004). Based on the results of these activities, a decision can be formulated to either leave services in-house or to outsource them (Zahn et al., 1999).

Following the evaluation and in parallel to a due diligence process, the negotiation phase starts. As soon as legal contract formulation has been completed both parties will agree to sign the deals contract (Dittrich & Braun, 2004). For some time after contract signature the information technology systems will be running in parallel according to the established processes and service level agreements (Bräutigam, 2004). Eventually the clients systems will be gradually phased out and the provider's new processes and service level agreements put into place.

Once the desired operation level (also referred to as future mode of operation) has been reached the operational responsibility, according to the service level agreement, will be transferred to the outsourcing provider (Gründer, 2004). Entering the operating phase marks the point where the service delivery responsibility is transferred from the client to the provider.

The exit phase will be initiated either by reaching the agreed end of a contract or at an earlier point in time upon mutual agreement or, in certain circumstances, even disagreement (Bugajska et al, 2006). The outsourcing client may renew an existing contract without modification or initiate a re-tendering process and hereby enter the evaluation phase again. If the service delivery responsibility at the end of a relationship shifts (Gründer, 2004), either back to the client (Backsourcing) or to a new provider (Re-Sourcing), similar activities as those in the transition phase need to be performed.

Research goals and contributions

The work presented in this paper is a first attempt towards understanding how we can design, manage and support knowledge transfer between firms in outsourcing relationships. This involves identifying the typical phases of knowledge transfer processes in outsourcing, the most important activities and knowledge transfer techniques, and analyzing how they can be employed (or should be extended) to reduce outsourcing-specific knowledge-asymmetries.

While Feeny et al. (2006) as well as Nicholson and Sahay (2006) are bringing a structured knowledge perspective into the outsourcing literature, to the best of our knowledge, our work is the first study to analyze which specific knowledge transfer activities are undertaken during an outsourcing life-span. Moreover, we investigate how and which activities are aligned with individual phases of the outsourcing process itself. By identifying the most important activities and knowledge transfer techniques of current practices, we can propose a preliminary, empirically-grounded approximation of a reference process model for knowledge transfer in outsourcing.

Such a model and the gained insights on the nature of underlying activities and techniques provide a starting point for helping companies to plan, manage and deploy knowledge transfer practices from the outset of their outsourcing relationships. This

should allow them to reduce uncertainty within an outsourcing relationship and hence reduce the risk of the business transaction (e.g., economical risk posed by a costly unplanned backsourcing (Dibbern & Heinzl, 2001)) or loss of competitive advantage by missing knowledge). Our results therefore may allow firms to create new competitive advantage by making sure that new knowledge is gained rather than drained from the company. This is important in particular for enabling small and medium enterprises to manage their outsourcing practice in a way that allows them to profit from an outsourcing organization similar to the benefits enjoyed by large companies today. In addition, the results of our analysis shall provide a starting point for further, more detailed research into individual aspects of knowledge transfer between organizations during an outsourcing relationship.

Methodology and data collection

We developed our multi case-study research according to Yin (2003) and employed problem focused interviews according to Mayring (2002) as our data collection technique. Responses were analyzed with the structured content analysis as described by Mayring (2002) – coding of responses was applied wherever ambiguous wording was used by the respondents. All interviews were transcribed and then validated by each interview respondent before the analysis started.

By nature, the case survey methodology implies limitations. Selected factors may be of lesser importance in any particular case. The analysis across multiple cases may also overstate the aggregated value of the aspects investigated and hide the relative complexity of any given case. However, case study research is generally found to be appropriate to conduct research into new areas if the subject area of investigation is firmly defined and based in existing theory (Yin, 2003). We meet this requirement by specifically looking at outsourcing and knowledge transfer. Further, our research design relies on external validity as we are able to draw on multiple cases (a recommended case study approach) (Rowley, 2002).

To develop the knowledge transfer reference process, we conducted 48 interviews in 12 cases with outsourcing clients and providers. An interview typically lasted 120 minutes, ranging from 30 to 180 minutes. Providers included one regional and 3 multinational outsourcing consultancies and outsourcing providers with employees ranging from 500 to over 300,000. We conducted interviews with executives, managers and employees of both parties of a deal, in order to identify the aspects of knowledge transfer mentioned by both. The size range of client companies was between 50,000 and a couple of dozen employees. 8 client organizations had a regional focus while 4 were multinational corporations. Deals under observation ranged from more than 620,000,000 down to 180,000 and involved between 8 and 1,000 employees.

Before starting the actual interview the case attributes were recorded in terms of monetary volume, duration, type of outsourcing, geographics and involved employees. First, we asked respondents to evaluate our literature based outsourcing process (see 2.2) and to suggest additional phases if necessary. We did this to make sure that we were starting off with a practical model before modifying it to fit the specific circumstances. Second, the interview respondents were asked to identify a few typical relevant knowledge items (Bugajska et al, 2006) to focus the subsequent discussion. These knowledge items were used by the interviewer to ask for more details regarding challenges, influence factors, measurements, and frequency as well as interaction method of the knowledge transfer. Third, we asked respondents about the specific design of the knowledge transfer process and which activities would be executed in which outsourcing phase. Fourth, we focused on the knowledge transfer techniques and asked respondents to name which techniques had been employed to conduct the knowledge transfer.

When analysing the knowledge transfer activities, we focused on the most common practices and selected exclusively those activities which could be found in the majority of cases. Therefore, in this paper we only present activities which were found in more than two cases. This will discriminate possible best practises. We will comment on any observed best practices as part of our result discussion.

Findings and discussion

Revising the literature-based outsourcing process model

As a first result of the study findings, the reference outsourcing process from literature needed to be revised, because out of 9 respondents only 33% agreed to the originally proposed model from the literature.. When asked about modifications that they would require in order to agree with the model, the respondents almost unanimously (80%) requested that a “transformation phase” be added in between the transition and operating phase (Figure 3). We intended such a question to provide the respondents with a familiar process framework to answer our subsequent questions more easily. Only after our analysis of interviews did we recognize that the transformation phase was suggested by many of our respondents.

When asked to explain and describe this transformation phase, the respondents argued that the outsourcing provider, in using business process reengineering techniques, would often modify the client’s operating procedures and implement new organizational structures (findings from Dittrich and Braun (2004) support such observations). Transferred client employees

would be integrated into the provider's organization. This transfer often proved more difficult than the transition of technical infrastructure (also supported by Chylla et al. (2004)). Accordingly, our outsourcing process model was modified to include such a transformation phase.

Figure 3. Respondent (dis)agreement with the literature-based outsourcing process model

	% without transformation	% with transformation
Agree	33.33	77.78
Partially Agree	55.56	11.11
Disagree	11.11	11.11

Towards the reference process for knowledge transfer in outsourcing

Having validated the outsourcing process model within the limited scope that our case study methodology allows for, we turn now to the findings on how the knowledge transfer process between the outsourcing provider and the client was designed. These findings are based on the 48 interviews for the 12 cases.

The first important result concerns the structure of the observed knowledge transfer process with respect to the general knowledge transfer process proposed in the literature (Szulanski, 1999). Clustering the knowledge transfer activities in the different cases revealed that the general model proposed by Szulanski (1999) needed to be modified for the outsourcing context. Thus, we first added one additional evaluation phase since 33% of the respondents placed activities specifically in this phase. This included activities leading towards a formal agreement of understanding. This phase could not be merged into the initiation phase, as outlined by Szulanski (1999), since the activities did not deal with individuals yet, but were on a larger organisational scale. Second, activities of Szulanski's (1999) original ramp-up phase were noted to be highly similar to the outsourcing transformation phase (as described in 5.1). In order to provide an integrated model, we built a superset of activities from both phases and subsequently named this new phase transition. Finally, the activity characteristics of the operating phase generally matched the activities of the integration phase. Thus, the responsibility of results rested with the new entity (provider or knowledge receiver).

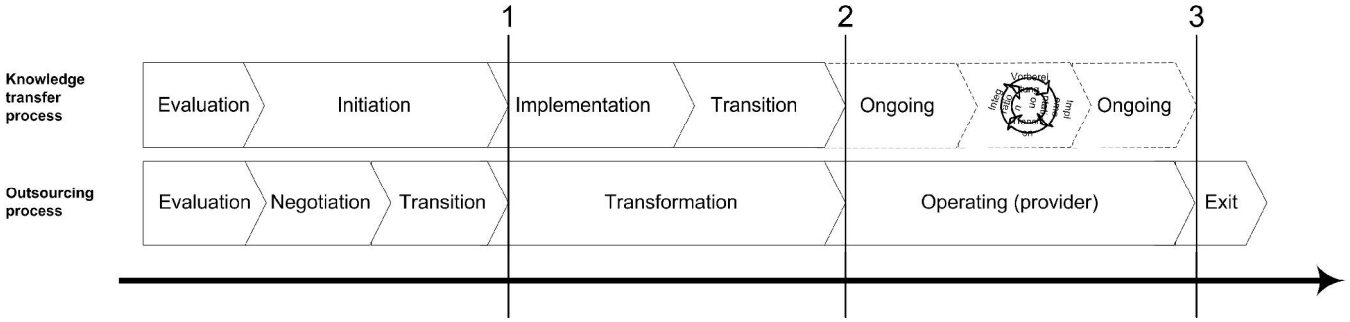

Figure 4: Preliminary process model for knowledge transfer in outsourcing

Accordingly, the knowledge transfer process in the studied outsourcing cases can now be composed of 5 phases as follows: evaluation, initiation, implementation, transition and ongoing (Figure 4). Unable to identify any activities regarding knowledge transfer related to the outsourcing exit phase, we assume that a "re-in-sourcing" or the installment of a new outsourcing partner will lead to a restart of the knowledge transfer process with switched roles.

The evaluation and initiation phase include planning activities for the subsequent implementation and transition phase activities. The evaluation during the knowledge transfer process differs from the more general evaluation phase in the outsourcing process. It requires activities to judge the provider according to its knowledge transfer as well as more general knowledge management capabilities. Although we could not directly observe such a clear knowledge centric evaluation, Hyder et al. (2004) suggest such a step in their outsourcing capability model for clients. However, the initiation phase in our sample includes very specific knowledge activities such as knowledge demand analysis, knowledge identification and skill assessment (see also 5.3). In some cases an explicit knowledge transfer plan has been applied as a useful tool for summarizing much of the initiation phase work.

At the end of the initiation phase, the outsourcing process and the knowledge transfer process synchronise with each other (line no. 1 in Figure 4) by mutually waiting for shared work results or activities. In the next step, the outsourcing project continues in the transformation phase while the first knowledge transfer implementation activities are carried out.

During the implementation phase we observed that knowledge portals and document exchange were used by the involved parties to a great extent (compare Figure 6 further down in section 5.3). For this reason, we suggest that client companies rigorously enforce document standards and central information integration throughout an outsourcing project. Such information management practices should at least be followed as rigorously as human resource practices, as both are equally likely to have an impact on an outsourcing projects success or failure.

The transition phase includes a gradual shift in responsibility from the original entity to the target entity. This responsibility shift is closely linked with the knowledge already transferred. The process often follows a formal plan and concludes with a sign-off milestone. To support this phase, we propose to monitor the knowledge transfer progress through work quality samples. Such quality targets could even be included in the knowledge transfer contract and therefore be linked to a governance instrument tracking the outsourcing projects progress as a whole. Once the operating responsibility has been assumed entirely by the target entity a second synchronisation (line no. 2 in Figure 4) between outsourcing and knowledge transfer process takes place. As the service delivery is supplied by the provider, knowledge is continually transferred back to the client.

These ongoing knowledge transfers continue until the third synchronisation (line no. 3 in Figure 4) is reached. After this point a formal exit procedure is carried out.

Synthesis of observed knowledge transfer activities and techniques

Our results show that the evaluation phase included sourcing strategy development and business model evaluation as one set of common activities (33% of the cases) and a second set consisting of offer evaluation, tendering, due diligence and provider selection (33%). During the initiation phase we observed knowledge demand analysis (42%), knowledge and information identification (75%), employee assessment (25%) and the development of a knowledge transfer plan (17%). All cases (100%) showed an explicit choice for one or more knowledge transfer techniques and application of these activities in the implementation phase. A summary of these techniques is shown in Figure 6. The Transition phase showed work towards a knowledge transfer sign-off to be the most common activity (50%). During the ongoing phase the most common activities repeated were knowledge transfers and knowledge dissemination (42%). Finally, there was no mention of knowledge transfer specific activities during the exit phase. In support of our main research goal, we conclude that a most common set of activities during any outsourcing process should include the ones outlined above. These activities represent an emergent pattern of practices in firms to run effective knowledge transfers in outsourcing situations.

Outsourcing is an area with a relatively high degree of planning activities. This is also evident from the large number of publications on the evaluation and negotiation phase (see section 2.2). Our results support that careful planning of knowledge transfer requires equal attention given to other aspects of outsourcing. One activity of the planning process and the knowledge transfer techniques distribution demands particular attention. The knowledge transfer plan related activities are important to outsourcing since they help to bridge the organisational boundaries and reduce information asymmetries. The implementation activities are of concern as they affect the action of learning and teaching of each individual. Therefore, in the next section we discuss these two activities in further detail.

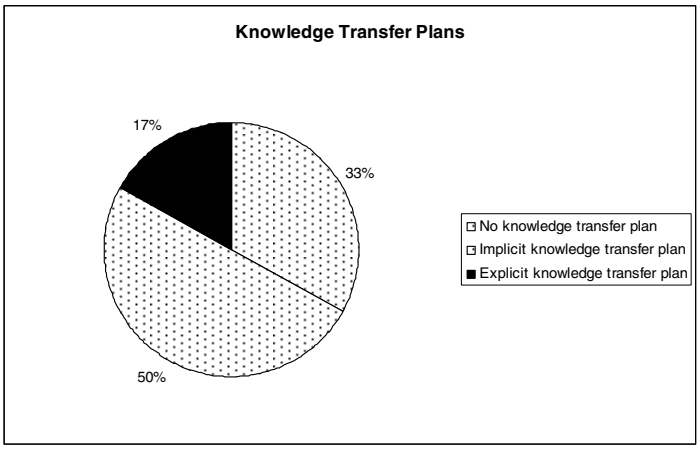

Figure 5: Knowledge transfer plans are rarely explicitly created but often implicitly established through related activities.

We noticed that a sign-off has taken place in 50% of our cases. We argue that since a sign-off is agreed upon, some goal-setting must have taken place before the sign-off event. An implicit plan must have been agreed upon; otherwise the two companies would find it difficult to agree when a sign-off would be appropriate. When comparing these results, we find that 67% of our cases had either an implicit or explicit knowledge transfer plan established (see Figure 5). This confirms the anecdotal evidence of the usefulness of the knowledge transfer plan provided by the respondents. Establishing explicit knowledge transfer plans can help reduce a great deal of uncertainty and should be regularly used to wrap-up the initiation phase. Williamson (1979) has established that contracts in general do reduce uncertainty. Ideally, the knowledge transfer plan should be a part of a more formal knowledge transfer contract between the relevant stakeholders.

The focus on the implementation phase reveals another particularly surprising fact: The transfer of employees in terms of frequency of transfer techniques ranks equally as the usage of knowledge portals (compare marked bars in Figure 6). Contrary to current perception of outsourcing, the more recent attention of the European Commission toward staff transfers Hughes (2006) would suggest that employee transfer is the most common technique. Other transfer techniques in Figure 5 show frequencies that are largely to be expected in a general business context.

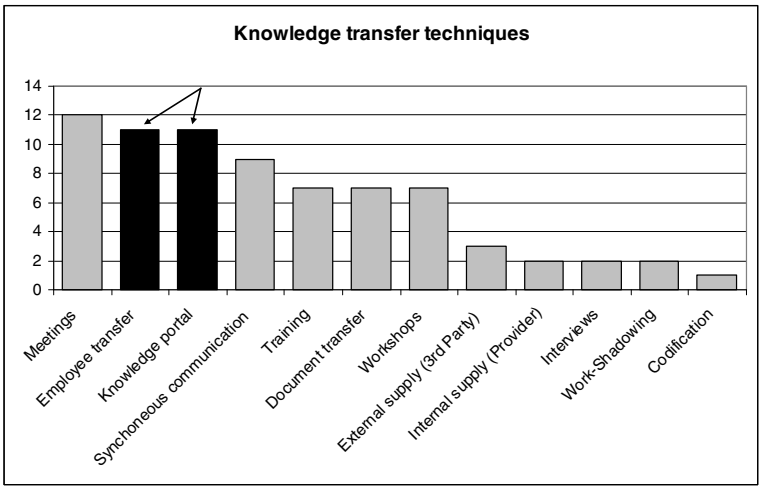

Figure 6. Most frequently used knowledge transfer techniques in 12 outsourcing cases

The insight that knowledge portals are used more often than workshops and simple document transfer or training, shows that organizations apparently attribute great value to proper documentation and dissemination inside an organization. The use of knowledge portals implies that document transfer is taking place frequently (a fact also supported by our data). We must assume that many clients therefore have been well prepared for an outsourcing project. Relatively little new documentation has been created as part of the knowledge transfer process which is underlined by the small number of cases using plain codification as transfer technique. Even though three of our cases have been classified by respondents as transitional outsourcing, an outsourcing type where poor internal process performance should be improved by externalizing the process and later internalizing the improved process. Activities were new process documentation could be expected. However, only one of these three cases involved software application development with a reported lack of documentation. Regarding our research goal, we conclude that careful design and possibly more attention should be attributed towards the creation of knowledge portals.

It is noteworthy that the knowledge tools survey for knowledge transfer within organizations by Chini (2004) doesn't display any employee transfer, neither internal nor external supply techniques (mapping other categories is difficult because of the different subject under investigation). This finding suggests that these three techniques are outsourcing specific.

Summary and outlook

With the work presented in this paper we have undertaken a first attempt towards understanding how we can design, manage and support knowledge transfer between firms in outsourcing relationships. The goal has been to fill in the gap of existing literature which considers knowledge transfer and outsourcing to be largely independent of each other, that is, in separate lines of research. This is in spite of the critical importance of knowledge transfer for the success of outsourcing activities

(Rea et al., 2003) and the findings such as Chini (2004) pointing to the need for contextualising knowledge transfer research in specific application domains.

To this end, we have presented results of 12 case-studies analyzing knowledge transfer processes in IT-outsourcing, investigated through 48 structured interviews. We have identified the main knowledge transfer phases and current practices between outsourcing partners, as well as outsourcing-specific knowledge transfer activities and most frequently used knowledge transfer techniques. The study findings have been consolidated into a preliminary, empirically-grounded reference model for knowledge transfer in outsourcing. The proposed model extends the general knowledge transfer model from literature (Szulanski, 1999) and shows how knowledge transfer activities are synchronized with the outsourcing process. In this way, this work provides not only insights into the specific nature and challenges of inter-organizational knowledge transfer in outsourcing, but also contributes to extending the existing body of knowledge on knowledge transfer in general.

By analyzing how current practices can be effectively employed or extended to reduce outsourcing-specific knowledge-asymmetries, we provide one of the first contributions to understanding how firms can design, manage and support knowledge transfer as a strategic goal of their outsourcing relationships. Among others, the detailed analysis of both explicit results and implicit practices reveals how the discrepancy between knowledge demand analysis, knowledge identification and knowledge transfer planning activities can be resolved by systematically using knowledge transfer plans as a practical tool for managing the knowledge transfer. We have proposed how such a tool can be used effectively by explicitly integrating it into the outsourcing process from the outset of the contracting phase of an outsourcing project, to the benefit of both outsourcing providers and clients. Our sample also reveals the importance of IT-supported knowledge transfer techniques, such as knowledge portals or document systems, which have been ranked at the same level as employee transfers (known as the most common technique in backsourcing in general).

To the best of our knowledge, the presented work is the first study to systematically analyse inter-organizational knowledge transfer phases, activities and techniques in outsourcing relationships. As such, the described contributions can help firms to model their outsourcing business more effectively and to better plan for knowledge activities in order to prevent knowledge-drain to outsourcing suppliers; rather, they can turn the outsourcing activities into a strategic knowledge-gain process. This should allow them to reduce uncertainty and knowledge-loss related risks; they should therefore be able to engage more easily in more knowledge intensive outsourcing practices (e.g., accounting and research) and reap associated benefits, commonly available only to large organizations.

The most important issue for further research is the extension of the study to include a number of additional cases (ideally a comprehensive survey) in order to verify and increase the external validity of our findings. Beyond common limitations inherent to the case-study research methodology (e.g., possible researcher bias or coding errors), we also acknowledge the limitations in the relatively low formalization level of our current knowledge transfer model (based on electronic process chain modelling). A non-trivial challenge for further research is to produce knowledge modelling description language models (Gronau & Fröming, 2006) for easier distribution to practitioners. Finally, while we have identified several aspects of possibilities for information technology support of outsourcing-specific knowledge transfer activities and techniques, more dedicated work is required to single out specific requirements for specialized outsourcing-support systems.

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